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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/588,043

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Bala Rathinasabapathi

10457-055US

1007

29847 7590 09/08/2009
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EXAMINER

BUI, PHUONG T

ART UNIT

PAPER NUMBER

1638

MAIL DATE

DELIVERY MODE

09/08/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/588,043	Applicant(s) RATHINASABAPATHI ET AL.	
	Examiner Phuong T. Bui	Art Unit 1638	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 15 June 2009.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 15-25 and 27-34 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 15-25 and 27-34 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1 The Office acknowledges the receipt of Applicant's amendment filed June 15, 2009. Claims 15-25 and 27-34 are pending and are examined in the instant application. All previous rejections not set forth below have been withdrawn. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action. This action is made FINAL.

SEQ ID NO:1 encoding SEQ ID NO:2 was first disclosed in PCT/US05/009047. Provisional Application No. 60/554041 refers to SEQ ID NOs:1 and 2, however, no sequence listing was provided.

Claim Rejections - 35 USC § 112, second paragraph

2. Claims 16-20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claims 16-20, "increased" is a relative term lacking a comparative basis.

Since no traversal was presented and no amendment was made, this rejection is maintained.

Claim Rejections - 35 USC § 112, first paragraph

3. Claims 15-20, 23-25, 27-29 and 32-34 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for SEQ ID NO:1 or a sequence encoding SEQ ID NO:2, does not reasonably provide enablement for sequences having less than 100% sequence identity to SEQ ID NO:1 or 2, including sequences which hybridize to SEQ ID NO:1. The specification does not enable any

person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with these claims. This rejection is maintained for reasons of record.

Applicant traverses primarily that one skilled in the art would be able to determine sequences meeting this limitation, make and test them for activity without undue experimentation.

Applicant's traversals have been considered but are deemed unpersuasive for the following reasons. While one skilled in the art can readily generate a genus of sequences having 70-90% identity or which hybridize to SEQ ID NO:1 under stringent conditions, no guidance is provided as to which sequences within the genus would retain the recited activity, or how inoperable embodiments can be predictably eliminated without undue experimentation. No guidance is provided as to which region(s) must be conserved or can tolerate mutations. Applicant provided no working examples of sequences having less than 100% identity to SEQ ID NO:1 and 2. Moreover, the claims also recite characteristics including increased biomass and stress tolerance, which cannot be readily determined without plant transformation and regeneration. Thus, Applicant has not fully enabled the claimed invention as commensurate in scope with the claims without undue experimentation.

4. Claims 15-20, 23-25, 27-29 and 32-34 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the **written description** requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the

application was filed, had possession of the claimed invention. This rejection is maintained for reasons of record.

Applicant traverses primarily that one skilled in the art would understand that sequences having close identity with the model sequence can be determined in light of the understanding in the art and assistance of comparison programs such as best fit or gap, and the claims comply with current Patent Office written description guidelines.

Applicant's traversals have been considered but are deemed unpersuasive for the following reasons. The Office written description guidelines support the instant rejection. Example 11 of the guidelines indicates that while a claim drawn to a genus of sequences having 85% absent function has adequate written description, the same claim language plus function lacks adequate written description when there is only one sequence disclosed. In the instant application, while one skilled in the art can readily generate a genus of sequences having 70-90% identity or hybridizes to SEQ ID NO:1, the genus of sequences having 70-90% identity or hybridizes to SEQ ID NO:1 and encoding an aspartate decarboxylase is not adequately described. Accordingly, the rejection is maintained.

Claim Rejections - 35 USC § 103

5. Claims 15-25 and 27-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jones et al. (J. Bacteriol. 175(7), pp. 2125-2130, 1993) in view of Goodman et al. (USPN 4956282). This rejection is maintained for reasons of record.

Applicant traverses primarily that a vector for transfecting plants must be constructed, properly integrated into the plastic genome and expressed in plants.

Applicant further traverses that foreign protein expression, degradation, proper folding, toxicity to the plant or causing plant sterility are challenges and success is unpredictable. Applicant also indicated the robustness and heat, drought and salt tolerance are unexpected.

Applicant's traversals have been considered but are deemed unpersuasive for the following reasons. Unless there is evidence why the protein of Jones cannot be expressed by the method of Goodman, the claimed invention remains *prima facie* obvious. Goodman successfully constructed a plant vector, transformed a plant, and expressed a non-plant protein which was physiologically active, properly folded, not degraded, not toxic to the plant, and did not render the plant sterile. Goodman further teaches enzyme expression in plants. Robustness, heat, drought and salt tolerance are inherent properties of a plant expressing SEQ ID NO:1. Accordingly, the rejection is maintained.

Remarks

6. No claim is allowed.
7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Phuong T. Bui whose telephone number is 571-272-0793.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Anne Marie Grunberg can be reached on 571-272-0975. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Phuong T. Bui/
Primary Examiner, Art Unit 1638

9/3/09